

PAA vs. Salmonella at pH's 5, 7, 8, 9, 10

All Solutions were dosed to a nominal **5 ppm** PAA (using the modified DPD Low Range Test)

Feedstock: Perasan MP-2.

Neutralized with thiosulfate.

Final Report: 12/22/2010

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pH (time)	Log ₁₀ CFU/ml Remaining		Percent Reduction		Date Completed
	Test 1	Test 2	Test 1	Test 2	
Control (pH 5)	7.34/NA	N/A	N/A	N/A	12/3/2010 (#1)
5 pH (1 min)	6.51/0.83	N/A	85.21%	N/A	
5 pH (5 min)	2.09/5.25	N/A	99.999%	N/A	
5 pH (10 min)	1.59/5.75	N/A	>99.999%	N/A	
5 pH (20 min)	1.23/6.11	N/A	>99.999%	N/A	
Control (pH 7)	6.95/NA	7.81/NA	N/A	N/A	12/10/2010
7 pH (1 min)	5.59/1.36	7.11/0.70	95.64%	80.05%	
7 pH (5 min)	2.21/4.74	4.30/3.51	99.998%	99.969%	
7 pH (10 min)	1.56/5.39	2.78/5.03	99.999%	99.999%	
7 pH (20 min)	1.74/5.21	2.15/5.66	99.999%	99.999%	
Control (pH 8)	6.95/NA	6.95/NA	N/A	N/A	12/14/2010
8 pH (1 min)	6.77/0.18	6.33/0.62	33.93%	76.06%	
8 pH (5 min)	0/>6.95	0/>6.95	>99.999%	>99.999%	
8 pH (10 min)	0/>6.95	0/>6.95	>99.999%	>99.999%	
8 pH (20 min)	0/>6.95	0/>6.95	>99.999%	>99.999%	
Control (pH 9)	6.95/NA	6.95/NA	N/A	N/A	12/14/2010
9 pH (1 min)	6.74/0.21	6.80/0.15	38.34%	29.21%	
9 pH (5 min)	5.85/1.10	5.11/1.84	92.06%	98.55%	
9 pH (10 min)	0/>6.95	0/>6.95	>99.999%	>99.999%	
9 pH (20 min)	0/>6.95	0/>6.95	>99.999%	>99.999%	
Control (pH 10)	6.95/NA	7.81/NA	N/A	N/A	12/10/2010
10 pH (1 min)	7.10/0	TNTC/0	0%	0%	
10 pH (5 min)	7.00/0	TNTC/0	0%	0%	
10 pH (10 min)	6.85/0.10	TNTC/0	20.57%	0%	
10 pH (20 min)	6.65/0.30	7.00/0.81	49.88%	84.51%	

* Test 2 at pH 5 was not done due to expected high efficacy obtained in Test 1.

*The mole ratios of PAA:H₂O₂ were adjusted at pH 10 to see if there were any added or synergistic effects of H₂O₂. Hydroxyl radicals from the excess H₂O₂ had no apparent effect on the efficacy, and is unnecessary to do further study on this compound.

-Todd Shaver, B.S.

February 11, 2011

Study Director: Jon Howarth, Ph.D